

REMARKS

Claims 1-19 are presently pending in the application.

Claim 1 has been amended to specify that at least one of the evacuated panels contains a filling material consisting essentially of polymeric material and at least another evacuated panel contains a material consisting essentially of inorganic material. This Amendment is supported, for example, in paragraphs [0015], [0023]-[0025] and [0031] of the specification. In addition, new claims 14-19 have been added to claim further preferred features of the invention. Claim 14 is supported, for example, at paragraph [0024], particularly page 5, lines 9-11 of the specification; claims 15 and 16 are supported, for example, in paragraphs [0019] and [0031] of the specification and in the drawings; and claims 17-19 are supported, for example, at paragraphs [0023] and [0024] of the specification and in original claims 1 and 2. Accordingly, no new matter has been added and entry of the amendments is respectfully requested.

The Examiner has objected to the specification on the ground of improper incorporation of essential material in the specification by reference to a foreign application or patent. The Examiner requires amendment of the disclosure to include the material incorporated by reference, together with a Declaration stating that the amendatory material consists of the same material incorporated by reference. This objection is respectfully but strenuously traversed.

Contrary to the Examiner's assertion, the material incorporated by reference is not a foreign application or patent. Instead, it is an International (PCT) application designating the United States. As such, it is considered to have been filed in the United States on its International filing date, namely June 25, 2002. Moreover, it is in the English language and is therefore not objectionable on that account. Finally, the present application is substantially identical to the International application, so that the material incorporated by reference is believed to be already present in the present application. The incorporation by reference of the International application is made merely as a precaution, in case any essential material was inadvertently omitted in revising the present application to U.S. form. Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

The Examiner has rejected claims 1, 3, 11 and 12 under 35 U.S.C. § 102(b) as being clearly anticipated by Eyhorn (U.S. Patent 6,110,310). The Examiner sets forth no basis for this rejection, and in that respect the rejection is improper. It is assumed that the Examiner is relying

upon the same portions of Eyhorn as cited by the searcher in the International Search Report, which was submitted with the Information Disclosure Statement filed with this application. Those portions of Eyhorn and the Eyhorn reference in general have been reviewed to the extent it can be guessed what the basis is for the Examiner's rejection. However, if the Examiner maintains this or any other rejection based upon Eyhorn, he is requested to specifically explain the portions of Eyhorn relied upon and the basis of the rejection.

At the outset, it is noted that Eyhorn is cited and discussed both in the Background section of the present application at paragraph [0013], where its disadvantages are mentioned, and again in paragraph [0030], where it is referred to for other inorganic additives which may be added to the panels.

The present invention is directed to a heat insulating system for tubular bodies comprising at least two superimposed evacuated panels, each containing discontinuous or porous filling material inside an envelope which has been internally evacuated. At least one of the evacuated panels contains a filling material consisting essentially of polymeric material and at least another evacuated panel contains a filling material consisting essentially of inorganic material. Important advantages of using two different types of panels in the insulating system include overall lower weight and lower costs compared with systems using only panels containing microporous inorganic materials, while still having the advantage of obtaining very good thermal insulation properties (see paragraph [0034]).

Applicants concede that evacuated insulating panels are known in the prior art, which contain porous or uneven filling materials including inorganic fillers, such as silica powder, glass fibers, etc. or polymeric filling materials, such as polyurethane or polystyrene rigid foams, in the form of boards or powders (see for example paragraph [0007] of the present specification). However, the prior art does not teach or suggest the use of two or more superimposed evacuated panels in which at least one of the panels contains a filling material consisting essentially of a polymeric material and at least one of the evacuated panels contains a filling material consisting essentially of inorganic material. Instead, the evacuated insulating panels of the prior art are generally all the same in a given insulating system. At least, no disclosure or suggestion can be found of using different filling materials in different panels within the same system to provide different functions as required in the presently claimed invention.

Eyhorn allows for the possibility of including both inorganic materials, such as metal oxides, mica, pearlite or vermiculite, and organic fibers, such as viscose fibers, in the molded element for the insulating panel. However, Eyhorn makes no mention of using two different types of panels in his insulation system. While the thermal insulation of Eyhorn may include a multilayer structure of two to five or more layers of molded elements, the molded elements are presumably each the same, since Applicants can find no mention of using different materials in the layers. Moreover, the molded element preferably contains 30-100% by weight of fine-particled metal oxide (column 3, lines 60-62), so that the expense and weight of the inorganic particles is maintained by Eyhorn. There is no suggestion of reducing the weight and/or expense of the layers by substituting a layer or panel of polymeric filling material.

Moreover, Eyhorn requires that at least one of the layers of molded element have the vacuum destroyed, so that the volume of the molded element increases, and gaps or cracks through which the heat can pass are made smaller or are closed (see column 1, lines 49-62). In contrast, the presently claimed invention requires that each panel of the insulating system be internally evacuated.

Accordingly, Eyhorn fails to teach or suggest the presently claimed invention, and reconsideration and withdrawal of this rejection are respectfully requested.

The Examiner has also rejected claims 1-13 under 35 U.S.C. § 103(a) as being unpatentable over Hunter (U.S. Patent 6,037,033) in view of Hughes (U.S. Patent 4,680,070). The Examiner contends that Hunter discloses all of the recited structure with the exception of stating how the insulation is provided on a pipe, specifically rolling the layers around a longitudinal axis wherein the inner and outer layer seams are offset and to use a specific type of silica, specifically pyrogenic silica. However, the Examiner argues that Hughes discloses the recited insulation system comprising at least two superimposed panels formed as layers 1, where the insulation layer is wrapped longitudinally around to form the cylindrical shape to be placed over a pipe, with the seams of the layers shown in Fig. 5 to be offset near 4. The Examiner also contends that the insulation of Hughes can be organic or inorganic and can include silica and glass fibers, including pyrogenic silica as one form of silica. The Examiner also argues that the use of specific sized particles for the inorganic material, such as silica powder, is merely a choice

of mechanical expedients requiring only routine experimentation to arrive at the optimum values of the materials used.

The Examiner concludes that it would have been obvious to one skilled in the art to modify the insulation panels in Hunter by winding them around the pipe longitudinally with side edges parallel and opposed to one another, with the seams being offset, and to modify the silica to any usable form, including pyrogenic silica, as suggested by Hughes. This rejection is respectfully but strenuously traversed for the reasons set forth in detail below.

Contrary to the Examiner's contention, Hunter deals only with single evacuated panels, not a system as presently claimed comprising two or more different panels. Instead, Hunter is directed to various geometric features of the panel, including features of the thermal insulation barrier or the mutual positioning of at least two different insulation elements. However, these insulation elements are contained within the same panel, rather than being separate panels with each having an evacuated envelope containing a filling material. Hence, contrary to the Examiner's position, Hunter does not disclose a system of at least two superimposed evacuated panels. Moreover, since Hunter only discloses single panels, it cannot possibly teach or suggest the use of two or more different panels containing different filling materials, at least one containing inorganic material and at least one containing polymeric material.


Hughes does not make up for the deficiencies of Hunter, because it does not even deal with evacuated panels. Instead, the insulation material of Hughes comprises tubes of microporous thermal insulation material which are non-evacuated. Moreover, as with Hunter, there is no teaching of using a number of different panels having different types of filling materials. Thus, each layer or slab of thermal insulation material of Hughes appears to be the same.

Accordingly, even if the Hunter and Hughes references were properly combined, which Applicants do not agree, the combination still fails to teach or suggest the presently claimed invention, particularly because there is no teaching of using superimposed panels containing different filling materials, at least one containing inorganic material and at least one containing polymeric material. Therefore, the rejection based upon Hunter in view of Hughes is improper and should be withdrawn.

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Reply to Office Action of July 28, 2004

In view of the above Amendments and Remarks, it is submitted that all of the claims in the application patentably distinguish over the prior art of record. Reconsideration and an early Notice of Allowance are respectfully solicited.

Respectfully submitted,

November 29, 2004 By: 
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WWS/rc
Enclosure – Petition for Extension of Time (one month)